

REMARKS

This is in response to the Office Action mailed January 18, 2007. In the Office Action, all claims 1-6, 8-30 and 32-36 were rejected. With this amendment, claims 1, 5, 6, 13 and 23 are amended; claims 18-22, 30 and 32-36 are canceled; and the remaining claims are unchanged in the application.

Section Three of the Office Action indicated that claims 1-6 were rejected under 35 U.S.C. 112, as allegedly failing to comply with the written description requirement. The Office Action asserted that independent claims 1, 13 and 23 were previously amended to include the limitation "at the catalytic activity rate that is resistant to change as a function of elevated temperature or the presence of sulfur." Applicants have amended claims 1, 13 and 23 to remove that language and respectfully submit that all such claims are now in proper form for allowance.

Section Four of the Office Action indicated that dependent claim 5 was rejected under 35 U.S.C. 112, as allegedly failing to comply with the written description requirement. The Office Action asserted that the claim contains new subject matter which was allegedly not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the Office Action objected to the amendment of claim 5 to include the limitation "catalyst comprises doped lanthanum manganite." Applicants have amended dependent claim 5 to remove that limitation.

Section Five of the Office Action indicated that dependent claim 6 was rejected under 35 U.S.C. 112, as allegedly failing to comply with the written description requirement.

Specifically, the Office Action objected to the limitation "catalyst comprises doped ceria." Applicants have amended claim 6 to remove that limitation.

Section Six of the Office Action indicated that dependent claim 30 was rejected under 35 U.S.C. 112. Applicants have canceled dependent claim 30.

Section Eight of the Office Action indicated that claims 1-6 and 8-30 were rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. With respect to claim 1, Section Nine of the Office Action noted the limitation "at a catalytic activity rate that is resistant to change as a function of the elevated temperature or the presence of sulfur." The Office Action asserted that it is unclear what the "at" applies to. Applicants respectfully note that amended independent claim 1 has been changed to remove the allegedly ambiguous language. Similarly, Section Ten of the Office Action indicated that the term "elevated" in each of independent claims 1, 13 and 23 is a relative term which allegedly renders each of those claims indefinite. Applicants respectfully note that each of claims 1, 13 and 23 have been amended to remove that language.

Based upon the above, Applicants respectfully submit that the entire application is now in proper form for allowance.

Section Fourteen of the Office Action indicated that independent claim 1, among others, was rejected under 35 U.S.C. 103(a) as being unpatentable over Sheridan et al. (U.S. Patent 5,627,328 - hereinafter Sheridan) in view of Dalla Betta et al. (U.S. Patent 5,314,828 - hereinafter Dalla Betta '828). Applicants have amended independent claim 1 to better distinguish that claim from the cited references. Specifically, claim 1

recites that each of the first and second covers are protective covers and are metallic. Support for this amendment may be found on page 12 of Applicants' specification. Specifically, the specification provides, "RTD elements 34, 36 may be used in either the film or wire form, or any other suitable form and are preferably sealed in a protective cover that is preferably constructed of stainless steel." Such metallic protective covers over both temperature sensing devices is not provided by Della Betta '828. Accordingly, Applicants respectfully submit that amended independent claim 1 is allowable over Sheridan and Dalla Betta '828, taken alone or in combination. Further, Applicants respectfully submit that dependant claims 2-6 and 8-12 are allowable as well by virtue of their dependency, either directly or indirectly, from allowable amended independent claim 1.

Section Nineteen of the Office Action indicated that independent claim 13, among others, was rejected under 35 U.S.C. 103(a) as being unpatentable over Sheridan in view of Yokota et al. (U.S. Patent 6,368,479 - hereinafter Yokota). Applicants have amended independent claim 13 to recite the subject matter previously set forth in dependent claim 20. Accordingly, independent claim 13 now indicates that the working electrode is constructed using doped ceria. Applicants respectfully note that the subject matter of previously dependent claim 20 was rejected based upon the Sheridan/Yokota combination indicating, specifically, that Yokota discloses the working electrode being constructed from doped ceria in column 5, lines 57-64. However, column 5, lines 57-64 of Yokota simply speaks to the potential compositions for solid electrolyte 6, and does not discuss the composition of the working electrode. Instead, beginning at line 14 of column 7, where the composition of the sensing electrode is discussed, there is simply no teaching or suggestion of using

doped ceria for the sensing electrode. Accordingly, Applicants respectfully submit that amended independent claim 13 is allowable over Sheridan and Yokota, taken alone or in combination. Additionally, Applicants respectfully submit that dependent claims 14-17 are allowable as well by virtue of their dependency, either directly or indirectly, from allowable amended independent claim 13.

Section Twenty Two of the Office Action indicated that independent claim 23 was rejected under 35 U.S.C. 103(a) as being unpatentable over Sheridan in view of Isenberg (U.S. Patent 4,428,817). Applicants have amended independent claim 23 in order to better distinguish that claim from the combined teachings of Sheridan and Isenberg. Specifically, amended independent claim 23 now recites that the working electrode is a mixed ion/electron conductor chosen from the ceria-containing fluorite group of materials. Support for this amendment can be found on page 16 of Applicants' specification. Specifically, the specification provides, "process/working electrode 56 is exposed to the...analyzed gas stream and is a mixed ionic/electronic conductor chosen from the ceria-containing fluorite group of materials (and preferably terbium or praseodymium stabilized ceria)." With respect to the utilization of ceria or its solid solution, dependent claim 28 currently recites the utilization of ceria for the working electrode. Dependent claim 28 was rejected in Section Twenty Three of the Office Action as being unpatentable over Sheridan in view of Isenberg and further in view of Ruka et al. (U.S. Patent 5,021,304 - hereinafter Ruka). However Applicants respectfully submit that the Ruka reference is not drawn from analogous art. Specifically, U.S. Patent 5,021,304 is directed to modified cermet fuel electrodes for solid electrochemical cells. More specifically, column 3, lines

3-6 of Ruka provides, "The cell can have a variety of shapes but the preferred shape is tubular, as that configuration has already been used successfully in multi-kilowatt systems of solid oxide electrochemical cells." Respectfully, multi-kilowatt fuel cells are drastically different than the solid state oxygen sensor recited in amended claim 23. Accordingly, Applicants believe that the combination of the Ruka reference with the teachings of Isenberg and Sheridan is improper. Thus, Applicants respectfully submit that amended independent claim 23 is allowable over the art of record. Further, Applicants respectfully submit that dependent claims 24-29 are allowable as well by virtue of their dependency, either directly or indirectly, from allowable independent claims.

Claims 30-36 have been canceled.

In conclusion, Applicants respectfully submit that the entire application is now in condition for allowance. Reconsideration and favorable action are respectfully requested.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

WESTMAN, CHAMPLIN & KELLY, P.A.

By: 

Christopher R. Christenson, Reg. No. 42,413
900 Second Avenue South, Suite 1400
Minneapolis, Minnesota 55402-3319
Phone: (612) 334-3222 Fax: (612) 334-3312

CRC:sew